

REMARKS

Claim 38 is presently pending in the application. Claim 38 has been amended to more particularly define the invention. No new matter is added.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claim 38 stands provisionally rejected on the ground of nonstatutory double patenting over claims 1-37 of copending Application No. 12/062,211. However, Applicant respectfully disagrees and submits that the subject matter of claim 38 of the present application has different scope than claims 1-37 of copending Application No. 12/062,211. Specifically, claim 38 is not taught or suggest by claims 1-37 of copending Application No. 12/062,211.

With respect to the prior art, claim 38 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Dai (U.S. Patent Publication No. 2005/0049848 A1) in view of Autrey et al. (U.S. Patent No. 5,774,695).

This rejection is respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary aspect of the claimed invention (e.g., as recited in claim 38) is directed to a computer system, including a local area network (LAN), a plurality of computers without on-board user interface controllers, each of the computers including at least one central processing unit (CPU) and a LAN interface, the LAN interface being coupled to communicate over the LAN, a console

including a user input device and a user output device, the console being coupled to communicate over the LAN such that the console conveys an input received via the user input device over the LAN to each of the computers and to receive an output generated by each of the computers over the LAN for display using the user output device, and an input/output (I/O) device, coupled to the LAN. The plurality of computers and the console are arranged to communicate over the LAN by transmitting Layer 2 data frames. The plurality of computers and the console are arranged to convey the input and the output by tunneling over Layer 2 on the LAN. The plurality of computers and the console are arranged to encapsulate the input and output in Internet Protocol (IP) packets for transmission over the LAN. The plurality of computers and the console are arranged to encapsulate the input and output using an application-layer protocol. The plurality of computers are arranged to transmit I/O commands over the LAN to the I/O device and include on-board I/O device controllers. Each of the computers further includes an emulation processor, the emulation processor coupled to trap the I/O commands from the at least one CPU while emulating the I/O device, and to encapsulate the I/O commands in data frames for transmission over the LAN to the I/O device such that the I/O device is caused to fulfill the commands. The emulation processor is arranged to encapsulate the I/O commands in Ethernet frames. The emulation processor is arranged to encapsulate the I/O commands in Internet Protocol (IP) packets. The emulation processor is arranged to encapsulate the I/O commands using an application-layer protocol.

A number of new standards have recently been promulgated to permit accessing at least some I/O peripherals remotely, via packet networks. However, conventional computer systems are not oriented in such a way as to accommodate such a structure (Application at page 1, line 13 to page 2, line 10).

The claimed invention, on the other hand, is directed to a computer system, where each of the

computers further includes an emulation processor, the emulation processor coupled to trap the I/O commands from the at least one CPU while emulating the I/O device and to encapsulate the I/O commands in data frames for transmission over the LAN to the I/O device such that the I/O device is caused to fulfill the I/O commands (Application at page 3, line 30 to page 4, line 4). This exemplary feature may provide a computer system having substantially increased board space and reduced power requirements, complexity, cost, and management effort (Application at page 2, lines 25-29).

II. THE PRIOR ART REJECTION – The Alleged Dai and Autrey Combination

Dai discloses mechanisms that allow a physical storage device that has storage capability to emulate one or more storage devices (Dai at Abstract). Autrey discloses a protocol interface gateway connecting a telecommunication system emulator to a communications network (Autrey at Abstract). The Examiner alleges that the combination of Dai and Autrey makes the claimed invention obvious.

However, even assuming (arguendo) one of ordinary skill in the art would combine Dai and Autrey, the resultant combination fails to teach or suggest each and every feature of the claimed invention. Specifically, Dai and Autrey – either alone or assuming (arguendo) combination – clearly fail to teach or suggest a computer system, “wherein each of the computers further comprises an emulation processor, said emulation processor coupled to trap the I/O commands from the at least one CPU while emulating the I/O device and to encapsulate the I/O commands in data frames for transmission over the LAN to the I/O device such that the I/O device is caused to fulfill the I/O commands”, as recited, for example, in claim 38 (Application at page 3, line 30 to page 4, line 4). As previously mentioned, this exemplary feature may provide a computer system having

substantially increased board space and reduced power requirements, complexity, cost, and management effort (Application at page 2, lines 25-29).

The Examiner alleges that Dai teaches the exemplary feature of the claimed invention at paragraphs [0033]-[0035] and [0054] (Office Action at page 8, point 15). However, the logical-over-physical storage in Dai is located at the “slave-end” of the master-slave relationship. Thus, Dai is clearly differentiated from the computer system of the claimed invention, where each of the computers further includes an emulation processor, the emulation processor coupled to trap the I/O commands from the at least one CPU while emulating the I/O device and to encapsulate the I/O commands in data frames for transmission over the LAN to the I/O device such that the I/O device is caused to fulfill the I/O commands.

Dai teaches that given existing SCSI and iSCSI interactions of a given SCSI device (physical) can be used to emulate several (logical) devices. However, using a device to emulate another device in a similar class is not related and is clearly differentiated from the claimed invention. Indeed, this is clearly differentiated from the computer system of the claimed invention, where each of the computers further includes an emulation processor, the emulation processor coupled to trap the I/O commands from the at least one CPU while emulating the I/O device and to encapsulate the I/O commands in data frames for transmission over the LAN to the I/O device such that the I/O device is caused to fulfill the I/O commands.

Dai simply suggests how one type of network can be converted or emulated or how computer service are provided over a network, but fails to teach or suggest the exemplary feature of the claimed invention and the feature where a computer system has no on-board interfaces other than a network.

To make up for the deficiencies of Dai, the Examiner applies Autrey. The Examiner alleges

that, at column 2, lines 13-25 and column 8, lines 3-24, “Autrey teaches the computers and the console are arranged to encapsulate the input and output using an application-layer protocol. (Office Action at page 9, point 29) However, Autrey clearly fails to teach or suggest the computer system of the claimed invention, where each of the computers further includes an emulation processor, the emulation processor coupled to trap the I/O commands from the at least one CPU while emulating the I/O device and to encapsulate the I/O commands in data frames for transmission over the LAN to the I/O device such that the I/O device is caused to fulfill the I/O commands. Thus, Autrey fails to make up for the deficiencies of Dai with respect to the exemplary feature of the claimed invention.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection.

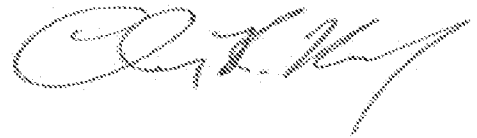
III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claim 38, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, Applicant requests the Examiner to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The undersigned authorizes the Commissioner to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,



Date: February 3, 2009

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